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AUTHOR	Rud, Anthony G., Jr.
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ABSTRACT

A number of present-day authors have noted factors that can work against or pose a threat to a sense of community, including the American propensity for individualism, industrialization, and the growth of mass communication and information technology. Some scholars have begun to suggest that schools, in particular, should get beyond mere contractual relations of barter to a relationship characterized by commitment and mutual obligations. This paper describes how a program at the North Carolina Center for the Advancement of Teaching (NCCAT) actually sought to use information technology in the form of computer conferencing to construct a community of teachers. The NCCAT program, called "Connected to the World," featured a 3-day residential seminar with attendees taking part in interactive electronic mail discussions both 2 months before and up to 1 month after. The program exemplified NCCAT's history of aiming to foster collegiality, inquiry, lifelong learning, and critical thinking among K-12 teachers. Only about half of the seminar attendees were able to participate in the online portion, but the other half were mailed printouts of comments from the listserv and had their own comments posted to the list. Three main topics emerged on the list, including how to deal with a student who tampered with a classmate's computer files and plagiarized her work, how the Internet will change how students and teachers work, and who should make decisions about age-appropriateness of information and library materials. The discussions that unfolded revealed that although computer conferencing is not a panacea for teacher development, it can foster awareness of wider issues in information technology, bring to attention multiple avenues for effectiveness in teaching many kinds of students, and aid reasoned, dialogic consideration of issues that are often given superficial treatment in the popular press. (Contains 23 references.) (BEW)

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The Development of an On-line Community of Inquiry

Paper presented at the 1995 meeting of the American Educational Research Association
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Anthony G. Rud Jr.
Purdue University

> *Or should we incorporate technology in a manner that suggests that learners and ideas are at the core of the educational process; that the teacher too, is a learner; that learning is a social process; and that, often, the richest learning occurs when all members of the learning community struggle together to not only find answers but to frame and reframe the questions as well?* (Harrington, 1993, p. 5)

Community is a term that has a great deal of currency in our culture. Yet, a number of present-day authors note the American propensity for individualism, and reliance upon an atomized self, can work against forming a community. The team of scholars who wrote *Habits of the Heart* (Bellah et. al., 1985) explore in detail how individualism in our society works against the norms of community. Americans form loose associations with each other, often based upon a single interest or similarity; yet these discrete associations rarely form around a common good.. Etzioni's work (1993) in particular his "communitarian network," recognizes this individualism, and seeks to promote not only community formation, but offers support and guidelines to those involved in research and practice in this area. In this paper, I use the term *community* to define a group that shares common interests and goals in a mutually supporting collection, where norms such as respect for one another and explicit communication are paramount.

The centrifugal forces of industrialization and mobility have torn apart and weakened community. The advent of information technology poses a particularly serious threat to community sustenance. Media critics have noted for years the deleterious effects of mass communication (principally television) upon family and social life, not to mention its powerful effects on formal schooling. Electronic networks and computer conferencing present some similar challenges, but also some opportunities for community building in a different way.

Recently, there has been attention given to the importance of community formation in schools, not only for the support community provides to individuals in their daily lives, but for the benefits for teaching and learning. Sergiovanni (1994) is one of the major proponents of this view. In his view, community is formed around shared ideals and values. In our schools, as well as in other areas of life, we live mostly in contractual relations, bartering with each other. Sergiovanni makes a case for getting beyond such barter, to a relationship characterized by commitment, shared values, felt interdependencies, and mutual obligations (pp. 4-5). Thick moral ties rather than

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calculated, instrumental links to one another (p. 10) characterize such community. The community itself provides for the needs of its members in a system of mutual support.

I shall use these provisional characterizations of community as I focus upon how I attempted to form such a relationship with groups of teachers. Developing a community of educators formed around a common and shared culture is difficult. Public schoolteachers are isolated from one another in the well-known "egg crate" (Rud, 1993) administrative and physical structure of schools. Yet many of these teachers (and administrators) voice a desire to form attachments with other educators, and to share ideas, concerns, tips on pedagogy, and so on. Matters of broad intellectual concern, such as societal factors that impinge upon teaching and learning, issues of professional ethics, and avocational interests such as literature, music, art, and science are also areas where many educators, particularly those in the public schools, would like to exchange ideas and support one another. Such conversations often provide the impetus toward improvement of current practice, and even the ways of the wider society.

Kathy Short's (1992) work with teachers in Arizona described the advantages, and warned of the difficulties in creating such community. Short confirmed that brief staff development was the enemy of community: "More than prescriptive mandates or packaged programs, teacher seek support for their day-to-day living in schools. They want to work with each other in thinking, analyzing, and creating conditions for change" (p. 36). Short helped to generate this ethos through regular meetings that grew out of teacher concerns over both theoretical and practical issues (p. 36). Short learned just how difficult the development of such a community is, where the norms are collaboration, dialogue, vulnerability, negotiation, and shared knowledge (p. 37); yet she affirmed that this process was of great value for teaching, learning, and teacher development.

My previous position at The North Carolina Center for the Advancement of Teaching (NCCAT) afforded me a number of opportunities to attempt, like Short, to develop a community of educators. In 1993-94, I chose to explore how the relatively new medium of information technology, particularly computer conferencing, could be used to support further the construction of a *community of inquiry* (Lipman et al., 1980; Sharp, 1995). Such a group is defined by a shared goal of investigation of conceptual issues and bound by norms of collegiality and mutual learning. There should be less reliance upon outside authorities for sources of knowledge. I theorized that information technology, well known as a leveler of authority and a spreader of knowledge, would abet the creation of a community defined by inquiry.

In this paper I describe NCCAT and its rationale, and a program held there in the spring of 1994, titled *Connected to the World.* This program dealt with topics in information technology and education, and focused explicitly on the use of computer conferencing in order to develop a community of inquiry. It began with an on-line, interactive Internet component two months in advance of the three-day residential seminar, and extended one month after the meeting. I discuss how I tried to frame early on-line conversations to encourage inquiry. I draw upon the nearly 200 messages exchanged among the seminar

participants in evaluating the success of this program in achieving this goal. I discuss how such a community can prepare teachers to be both effective and responsible (Oser, Dick, and Patry, 1993), while briefly considering the use of this medium in light of the social context of schooling.

NCCAT aims at fostering collegiality, inquiry, and life-long learning among K-12 teachers. A unit of The University of North Carolina system, it has a state-wide mission to provide intellectual and professional renewal for exemplary NC K-12 teachers. NCCAT was founded in the mid 1980s in response to the calls for educational reform initiated by *A Nation at Risk*. Educators and government officials in North Carolina were alarmed that the most highly qualified and experienced teachers were leaving teaching (Schlechty and Vance, 1981). To remedy this situation, a number of proposals were made. One idea advocated the establishment of a residential center that would emphasize study in advanced topics in the sciences, arts, and humanities, while also stressing the pedagogical application of these topics toward improvement of instruction.

Starting with pilot programs in 1985 and full-time operation in 1986, NCCAT enacted this mission through offering a variety of "seminars" (week-long residential programs). Staff went beyond the initial curricular plans for the Center, which stressed incremental cognitive improvement through engagement in traditional disciplinary professional development activities. What emerged over time was a vision of teacher development and renewal based upon a number of other models and sources. In the following section, I shall draw upon my own discussion (Rud, 1992) of the development of NCCAT's rationale.

Central to the conception of teacher renewal that NCCAT sought to enact is the idea of freedom. By this we meant what Dewey (cited in Rud, 1992, p. 46) called "freedom of intelligence," that internal cognitive freedom gained through knowledge Here, teaching implies more than performance and procedure; it also includes content, judgment, and rationale. The teacher is really a curriculum maker, even those instructors who stick to the book of a state mandated program. On the whole, teacher education has failed to capitalize on this fact. The Center's curriculum is based on the Deweyan notion that teachers are not just curriculum makers and enactors, but are also *philosophers* who construct knowledge through interaction of mind and environment (Oldendorf, 1992, p. 65).

We attempted to provide "learning in comfort" (Rud, 1992; in press) for our participants. Such hospitality or openness and care for the individual is important if one wants to do the hard work of critical thinking and dialogue. Participants brought together in a relaxed, supportive atmosphere away from school and home responsibilities could experience what Benjamin Bloom (cited in Rud, 1992, p. 47) calls a "peak learning experience," a powerful moment of truth characterized by cognitive concentration and emotional intensity, where one's life course might be changed. In addition, vulnerability to new ideas and reversals of cognition were important if inquiry is to proceed. Teaching is an "uncertain craft" as McDonald (1992) notes, and no amount of what Huebner calls

"protective armor" (cited in Oldendorf, 1992, pp. 66-67) provided by considerations of teaching as a profession or as having a "knowledge base" can shield us totally from this fact.

We also believed that knowledge could be drawn from multiple sources, and was best acquired via interdisciplinary and multidisciplinary means. Such learning would provide one with the basis for understanding fully the phenomenon in question. Norms of reflective and critical thinking were supported and articulated, in our *taxonomy of thinking skills and dispositions* (Rud, 1992):

- listening for the structure of an argument
- giving others time to respond
- respecting silence
- challenging what the person says
- "piggybacking"; building on what another person says
- recognizing what is essential or paradigmatic in discrete or particular facts of anecdotes
- evaluating claims based upon their merit and not their source (particularly apropos of "visiting experts" or other claims to authority)
- evaluating claims based upon their merit and not their emotional intensity
- asking for clarification of assertions made by presenters
- analyzing the components of a presentation
- comparing divergent presentations or discussions
- synthesizing the components of a seminar, while also respecting divergent viewpoints
- striving to articulate the theme or "steel rod" of a seminar session or entire seminar
- dwelling with ambiguity and tension as aspects of a complex mind (page 50)

The practice of such skills of dialogue and reflection, coupled with an understanding of many facets of a topic and its relation to teaching and learning in a broad context can result in what Shea (1992) has called *aesthetic praxis*. This is "...a feeling of transcendence accompanied by the sheer delight that a human organism experiences having achieved consistency between personal feelings, cultural interests, social ideals, and appropriate social action" (p. 21). Such praxis is consonant with what is called "complex responsibility" (Oser, Dick, and Patry, 1992, p. 443). Effectiveness and responsibility meld, going beyond mere learning, to an orientation toward overall achievement and meaning making in a mutual enterprise between student and teacher.

Given this philosophy of teacher renewal as developed at NCCAT, what would the addition of computer conferencing bring to the work? There are several reasons I thought conferencing could aid in teacher development, some with more practical in addition to philosophical content. For one, NCCAT is a small agency, with a state-wide mission. Typical weekly programming involved working with groups of teachers from different parts of the state. There was some programming that involved whole schools or school districts, though even then follow-up by NCCAT had to be limited to infrequent, unfunded, "moral" support. The distances in North Carolina are daunting; the state is 550

miles wide, and NCCAT is located in the extreme southwest corner. We had, as a faculty, thought extensively about how to continue and support a renewal experience (Oldendorf, 1992; Shea, 1992).

As part of my administrative duties, I had been given charge of implementing some of our ideas and developing an alumni network, as well as proposing and executing various activities. Most of these activities consisted of shortened versions of our residential programs, and were held on weekends at conference hotels across the state. The nature of these programs, due to their size and brevity, did not promote sustained dialogue on the topics presented. For instance, I led three iterations across the state of a weekend program on media ethics; participants heard presentations and engaged in dialogue with academics, and with television, radio, and print journalists on topics related to the role of media in society. There was little time to digest and play out the many issues of this topic. I studied the work of those who had used computer conferencing in preservice teacher education (Harrington, 1993; Harrington and Hathaway, 1994; Harrington and Quinn-Leering, 1994) and I began to see computer conferencing as a possible adjunct in fostering sustained, incremental, undominated dialogue about such topics that had necessarily been presented in compressed form.

Futhermore, I became intrigued by another colleague's observation that computer conferencing was similar to the disciplined listening of Quaker meetings: "To take part in a Quaker discussion means purposefully leaving spaces in the conversation between things that are said, that is, really listening to one another without getting ready to speak in response. E-mail forces us to take in what is said and feel no hurry about formulating our own thoughts" (Elliott, 1995). I noted the reaction of popular enthusiasts of the medium, who claimed electronic networking diffuses authority and levels status among participants (Rheingold, 1993, pp. 62-63). Rheingold asserts that though what he calls the *virtual* community is more ephemeral than a face-to-face community rooted in place. the usual means of interaction are reversed: "...in traditional communities, we are accustomed to meeting people, then getting to know them. In virtual communities, you can get to know people and then choose to meet them (Rheingold, 1993, pp. 26-27). I thought that these aspects of virtual communication might be well suited to the alumni network of NCCAT, and especially apt for the needs of adult learners for a sustained dialogue on topics of interest and importance.

The descriptor we sent to advertise *Connected to the World* promised that participants would engage in such sustained conversation, both on-line and in person, about the effects of technology on their personal and professional lives:

> *This program will be in two parts. In part one, scheduled to begin several months before they meet face-to-face, participants will communicate with one another electronically. They will introduce themselves via electronic mail or interactive sessions that involve the statewide Micronet system of Western Carolina University or the Internet, the well-known global network that is providing electronic communications for ever-increasing*

numbers of people. Discussions will follow of the seminar's selected readings on the social and intellectual effects of computers and telecommunications, with particular attention to teaching and learning. Participants will be encouraged to share readings or examples from their own areas of teaching expertise. In part two of the seminar, participants will come together at NCCAT to engage in further discussions of the effects of information technology on teaching, learning, thinking, and feeling. This phase of the seminar will be complemented by on-line demonstrations of Internet capacity by staff members of the WCU Computer Center. Long before they arrive at NCCAT and while here, participants will be able to ask questions and communicate on-line with people who use information technology in new and creative ways.

Thus, the structure of the *Connected to the World* seminar, though it did have a brief residential component, was essentially an experiment in how computer conferencing could work, not just for small groups of participants in the seminar, but as a teacher renewal activity for former participants spread across the state. In addition to the unfunded "moral" support of our alumni discussed earlier, we tried to "seed" various activities through limited financial and human resources. We encouraged participants to initiate their own renewal, or at least infuse the principles and practice of teacher renewal into staff development activities at the school or district level. Unfortunately, little such activity occurred. A progressive, innovative administrator rather than a classroom teacher usually launched any such program. The main reason for this was that classroom teachers did not have the time, administrative support, or clout to carry out additional activities for their colleagues. Also, some teachers surely were enamored with what we, as a well-funded state agency, could offer, knew they could not match it, and therefore did not pursue similar activities. Again, I became impressed that computer conferencing could indeed more easily foster the continued development of our alumni.

With the help of the computer center administrator at our host university, I set up a *listserv* that would allow the participants to post and receive each other's messages. Only about half of the participants (10) were able to participate in the on-line conferencing. The other half was interested in the topic enough to sign up for the seminar; in order to include them, and to entice them into finally coming on-line, I printed out all the responses, copied, and mailed them each week to the unplugged participants. I also posted any messages or letters I received from them to the list.

As with many computer conferences, a great deal of discussion dealt with information sharing and exercises in familiarity. I encouraged, and was patient with, such banter, as I believed it was part of the development of our community, in spite of the fact that I itched for more substantive discussion at times. The use of this virtual social lubricant paved the way for more detailed discussions of issues. I was trying to model a seminar experience for the participants before we met face-to-face. I surmised that the best teaching occurs when students and teachers are comfortable with each other before they discuss substantive issues (Rud, in press).

I sent out readings in advance, hoping to ignite discussion over the wires. In addition to the taxonomy of thinking skills and dispositions cited earlier, I included an article from *The New Yorker* about the culture of the Microsoft corporation; an essay by Wendell Berry on why he would never use a computer; a *New York Times* article about a computer code of ethics at Dartmouth College; a brief introductory piece on the Internet from an educational technology magazine; and an article in *Newsweek* about the explosive growth of the Internet, and its effects on social life. These articles brought up a number of issues around which I attempted to structure inquiry.

Three principal substantive issues emerged. The computer center coordinator of the adjacent university introduced the first issue, on computer ethics via a case involving plagiarism:

> *At the computer center we are dealing with a student who has broken into a fellow classmate's account and copied her work to his home computer. He then alters the code to disguise it as his work and submits it. (Joel, computer center coordinator)*

A number of participants voiced views on the case. A member of the local community, invited by me to be part of the program, suggested that the coordinator approach the faculty senate so that the case could be dealt with and guidelines established. Another participant agreed, but saw technology as irrelevant to the fundamental ethics of the issue. Several participants claimed that no matter what the "technology," be it paper and pen or computer chip, the case was clearly one of plagiarism. Though this initial discussion itself was brief and rather elementary, it helped set the tone for further exchanges on other topics. However, there was no real development of a deeper understanding of the issues surrounding Joel's case, and the conversation moved on to other arenas rather quickly.

I introduced a second equally timely topic, only partially suggested by the readings I had sent in advance. The virtual explosion of information that has been facilitated by the new technologies is of acute concern to teacher educators. The struggle over what should be taught, and what to excise, certainly has always been with us, though the rise of information technology has pressed it into high relief. I brought up the major points of an article by a former colleague from graduate school (Suber, 1992). Peter Suber, a philosophy and computer science professor, comments on the tensions in teaching for understanding while being bombarded by all kinds of information provided via the new technologies. He calls it "teaching in a blizzard of information," an apt metaphor, though I chose avalanche as more appropriate to the plight of the K-12 teacher. I asked how we teachers decide what is truly of worth to teach:

> *...How will the net change the way students work, and can teachers adjust to the change?...the net keeps me honest and learning also every time I sign on. There is no way of gaining control of it. (Frank, seminar leader).*

For beginners, it might help to think of the Internet as the world's biggest library. Or for that matter, just think of it as any library. Most of us don't feel compelled to read every book in every section of a library...we don't try to absorb the library as a whole...I think that many of us have the impression that we are supposed to 'understand' the Internet as a whole before we can use it. If we wait for that, most of us would never do anything. As for the volume of information out there, that is nothing new. It has always been there. It was just harder to get to it. (Barbara, community member).

The third topic built upon this discussion of the availability of information. Barbara, the community member, inserted some kind words about censorship. She was concerned about what was readily available via the new technologies, and suggested a standard of "age appropriate materials." A number of participants chimed in with their opinions. It was important that the topic came to light prior to the residential seminar. More than any other discussion, this topic brought the group together where knowledge, and values, could be shared and discussed.

I have problems with "age appropriate material." Who makes the decision about age and what's appropriate? I would like to work toward getting people to decide on their own what's appropriate. I still can't understand why I had to stay out of the adult side of the library until I was 14. What they did was drive me to other sources! (Frank, seminar leader)

My experiences at the local library were just like Frank's. The lady librarian saw it as her duty to prevent children from reading unsuitable books and was always confiscating choices I made. Today I let my eight year old daughter read whatever she wants. We talk a lot about what she reads....When the day comes when she finds out about the Holocaust, I know that she will be able to come to me and share her pain. (Rita, community member)

Though a great deal of the discussion dealt with moral and social issues outside information technology, continued questions over our use of such means of communication, and community building, remained. Since the demise of the *Connected to the World* list, I have received a number of contacts from former participants. Many remain intrigued by the use of computer networking, especially by the issues of its use in education. My most memorable responses from former participants, however, have been on how this medium allowed them to explore the moral dimensions of their own practice, and to share it with other teachers flung across the state.

Time, resources, and my own career change limited this experiment in computer conferencing with teachers. I found, however, that such work holds promise for teacher development, much as others (Harrington, 1993) had found this to be the case for preservice teacher education students. Participants in the seminar were able to share

easily with one another concerns and values, and some development of these ideas occurred between pale screens. They became aware of the wider issues involved in information technology. These teachers saw that such a resource provoked thinking about the relationship of effectiveness and responsibility. Discussion of topics such as an ethics of computer communication, or the avalanche of data unleashed by information technology, brought to attention that the wealth of information available for teaching and learning opens up multiple avenues for effectiveness for many different kinds of students. In addition, the need to decide what is of most worth to learn and pass on responsibly to others comes clearly in focus.

Though computer conferencing has definite advantages over other means of communication, it is by no means a panacea for teacher development. A number of recent commentators (Postman, 1992; Stoll, 1995) warn of placing too much faith in the breezy promises of the new technologies. Certainly these conflicts are being played out in the schools. Efforts such as my modest experiment in North Carolina enable teachers to become more deeply involved in the many issues surrounding the use of information technology in the schools. Computer conferencing, if adopted widely by teachers, can aid in the reasoned, dialogic consideration of issues that are often given superficial treatment in the popular press. Such conversation among peers is the heart of a community of inquiry.

References

Bellah, R., Madsen, R., Sullivan, W., Swidler, A., & Tipton, S. (1985). *Habits of the heart: Individualism and commitment in American life.* Berkeley: University of California Press.

Elliott, D. (1995). Personal communication with the author.

Etzioni, A. (1993). *The spirit of community: Rights, responsibilities, and the communitarian agenda.* New York: Crown Publishers.

Harrington, H. (1993). The essence of technology and the education of teachers. *Journal of Teacher Education, 44*(1), 5-15.

Harrington, H., & Hathaway, R. (1994). Computer conferencing, critical reflection, and teacher development. *Teaching and Teacher Education, 10*(5), 543-554.

Harrington, H., & Quinn-Leering, K. (1994). Computer conferencing and moral discourse in preservice teacher education. *Technology and Teacher Education Annual 1994* (pp. 661-665). Charlottesville, VA: Association for the Advancement of Computers in Education.

Lipman, M., Sharp, A., and Oscanyan, F. (1980). *Philosophy in the classroom.* Philadelphia: Temple University Press.

McDonald, J. (1992). *Teaching: Making sense of an uncertain craft.* New York: Teachers College Press.

Oldendorf, W. (1992). Adventures for the intellect. In Rud, A., and Oldendorf, W. (Eds.), *A place for teacher renewal* (pp. 63-86). New York: Teachers College Press.

Oser, F., Dick, A., and Patry, J. (Eds.). (1992). *Effective and responsible teaching: The new synthesis.* San Francisco: Jossey-Bass.

Postman, N. (1992). *Technopoly: The surrender of culture to technology.* New York: Knopf

Rheingold, H. (1993). *The virtual community: Homesteading on the electronic frontier.* Reading, MA: Addison-Wesley.

Rud, A. (in press). Learning in comfort: Developing an ethos of hospitality in education. In Garrison, J., and Rud, A. (Eds.), *The educational conversation: Closing the gap.* Albany, NY: SUNY Press.

Rud, A. (1993). Breaking the egg crate. *Educational Theory, 43*(1), 71-83.

Rud, A. (1992). Building a rationale for teacher renewal. In Rud, A., and Oldendorf, W. (Eds.), *A place for teacher renewal (*pp. 45-62*).* New York: Teachers College Press.

Rud, A., and Oldendorf, W. (Eds.) (1992). *A place for teacher renewal: Challenging the intellect, creating educational reform.* New York: Teachers College Press.

Schlechty, P., and Vance, V. (1981). Do academically able teachers leave education? The North Carolina case. *Phi Delta Kappan, 63*(2), 106-112.

Sergiovanni, T. (1994). *Building community in schools.* San Francisco: Jossey-Bass.

Sharp, A. (1995). The community of inquiry and the transformation of the self. Unpublished paper.

Shea, C. (1992). NCCAT's search for a teacher renewal philosophy: An historical account. In Rud, A., and Oldendorf, W. (Eds.), *A place for teacher renewal* (pp. 1-24). New York: Teachers College Press.

Short, K. (1992). "Living the process": Creating a learning community among educators. *Teaching Education, 4*(2), 35-42.

Stoll, C. (1995). *Silicon snake oil: Second thoughts on the information highway.* New York: Doubleday.

Suber, P. (1992). The database paradox: Unlimited information and the false blessing of 'objectivity'. *Library Hi Tech, 40*(10:4), 51-57.